Source Water Assessment Program (SWAP) Report For Codman Hill Condominiums

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

? Inventory land uses within the recharge areas of all public water supply sources;

? Assess the susceptibility of drinking water sources to contamination from these land uses; and

? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
January 26, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	Codman Hill Condominiums
PWS Address	276-318 Codman Hill Road
City/Town	Boxboro, Massachusetts
PWS ID Number	2037001
Local Contact	Myra Miller
Phone Number	(617) 243-8157

Well Name	***Source ID#***	***Zone I (in feet)***	***IWPA (in feet)***	***Source Susceptibility***
Well #1	2037001-01G	222	545	High
Well #2	2037001-02G	222	545	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

Codman Hill Condominiums get its water supply from two wells. Well #1 is the primary well and Well #2 serves as back-up. The wells for the facility are located on the easternmost end of the property. Each well has a Zone I of 222 feet and an Interim Wellhead Protection Area (IWPA) of 545 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. The wells serving the facility have no

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

treatment at this time. For current information on monitoring results and treatment and a copy of the most recent Consumer Confidence Report please contact the Public Water System contact person listed above in Table 1.
Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **Septic system;**
3. **Wastewater treatment plant;**
4. **Industrial park;**
5. **Hazardous material storage;**
6. **Transportation corridor; and**
7. **Stormwater Catchbasin.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is –** Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains condominium buildings, access roads, and parking areas. The public water supplier does not own and/or control all land encompassed by the Zone I. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

   Recommendations:

✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
✓ Do not use pesticides or fertilizers within the Zone I.

2. **Septic system –** The septic system is located within the Zone I and IWPAs and is pumped twice a year. If improperly used or maintained, septic systems are a potential of source contamination in groundwater and the water supply.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking lot and driveways	Both wells	Both wells	Moderate	Limit road salt usage and provide drainage away from wells
Landscaping and lawn care	Both wells	Both wells	Moderate	Fertilizer & Pesticide use
Septic System	Both wells	Both wells	Moderate	See septic systems brochure in the appendix
Wastewater treatment plant	No	Both wells	Moderate	Treatment Chemical or equipment maintenance materials
Industrial park	No	Both wells	High	Hazardous chemicals & wastes
Stormwater drains	Both wells	Both wells	Low	
Structures	Both wells	Both wells	-	Non-water supply structures in Zone I

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Recommendations:

- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.
- ✓ Residents and maintenance staff should be trained on proper disposal of spent household chemicals and encouraged to participate in local Household Hazardous waste collections.

3. **Wastewater treatment plant –** A wastewater treatment plant, across Route 495 lies within the IWPA of the water supply. Although there are no records of problems with the wastewater plant, wastewater overflows are a potential source of microbial and non-microbial contamination if improperly managed.

Recommendations:

- ✓ Let the owner of the wastewater treatment plant know that the waste water treatment plant lies within the protection area of the Codman Hill water supply.
- ✓ Ensure that any overflows discharge outside of the protection area.
- ✓ Make sure that the wastewater treatment plant is operated and maintained according to DEP requirements.

4. **Industrial park –** The water supply is located near an industrial complex. If not handled properly, spill or leaks of hazardous chemicals and or wastes can potentially contaminate groundwater.

Recommendation:

- ✓ Make sure that BMPs are in place for handling, storage, and disposal of hazardous chemicals and wastes.

5. **Hazardous material storage**- Small amounts of paints, thinners and varnishes are stored in a secure and properly labeled metal cabinet. If improperly handled, spills or leaks could potentially contaminate the water supply.

Recommendation:

- ✓ Continue to use BMPs to ensure the proper handling and storage of hazardous materials.

6. **Transportation corridor**- Route 495 is located within the IWPA. Route 495 is a heavily traveled road, which increases the chances of contamination from accidents, spills or road salt.

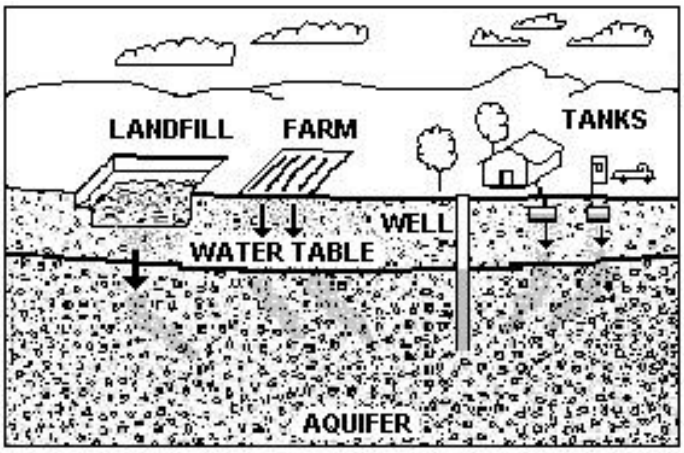

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Recommendations:

- ✓ Work with your local fire department to ensure that they include your IWPA in the Emergency Response Planning.
- ✓ Inform the Town Highway Department of the IWPA for reduced salt spreading.

7. **Storm Water Catch Basin –** Catch basins transport storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential sources of contamination include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

Recommendation:

- ✓ Work with the Town to have to the catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, and the local media.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Codman Hill Condominiums should review and adopt the key recommendations above and the following:

Zone I:

- Keep non-water supply activities out of the Zone I.
- Consider well relocation if Zone I threats cannot be mitigated.
- If the Condominium Association intends to continue utilizing the structures in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.
- If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.
- Do not use fertilizers or road salt within the Zone I.

Training and Education:

- Train residents on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator. Post labels as appropriate on raw materials and hazardous waste.
- Post drinking water protection area signs at key visibility locations.

Facilities Management:

- Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/bwp/dhm/dhmpubs.html.
- Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

Planning:

- Work with local officials in town to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet